REMARKS

Upon careful and complete consideration of the final Office Action dated November 25, 2008, applicants have requested amendment to the claims which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance. Favorable reconsideration of this application, as amended, is respectfully solicited.

Before addressing the issues raised in the Office Action, applicants wish to point out that claims 38 to 57 and 74 have been canceled, while process claims 58-73 have been maintained. Claim 58 has been amended to more clearly define the claimed process and claim 75, directed to a process for preparing a xylitol-maltitol mixture, was added. Said new claim is derived from claim 58. It is respectfully submitted that no new subject matter has been added by way of these amendments.

The Office Action objected to claim 48 based on some informalities. As this claim has been canceled, the objection has become moot.

Turning to the substantive rejections of the Office Action, claims 38-60 and 62-74 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over International Publication No. WO 91/07100 to Oravainen et al. (hereinafter referred to as "Oravainen et al.") and U.S. Patent No. 6,764,706 to Heikkila et al. (hereinafter referred to as "Heikkila et al."), in view of U.S. Patent No. 5,017,400 to Olinger et al. (hereinafter referred to as "Olinger et al.").

The Office Action based the rejection noted above initially upon the conclusion that Oravainen et al. teach the use of three polyols in a sweetener composition. The Office Action does note, however, that Oravainen et al. do not teach a process for the crystallization of the polyols as instantly claimed. Based on this acknowledgment, it is not seen how Oravainen et

al. is even a pertinent reference to the claimed process for the microcrystallization of polyols. The Office Action referred to the bicomponent crystallization Example of Oravainen et al., wherein a mass is prepared by melting xylitol and sorbitol (liquid components 45 to 60% of the sweetener) at 120 to 130°C. At this point, Oravainen et al. adds colorings, aromatic substances and vegetable fat, which diminishes the stickiness and improves the appearance, and GMS (emulsifier). The mass is then cooled to 95 to 105°C, at which temperature the xylitol/sorbitol seed crystal mixture (a total of 40 to 55% of the sweetener) is added. It is respectfully submitted that this is an example of producing a hard candy containing colorings, aromatic substances and vegetable fat, and not an example of producing a microcrystallized polyol composition. Nevertheless, the Office Action wants to rely on the teachings of Oravainen et al. for the conclusion that the use of three polyols in a sweetener composition has become obvious. Again, it is respectfully submitted that this has no bearing on the claimed process directed to a process for the microcrystallization of polyols into a polyol composition.

The Office Action went on to discuss that the process for the crystallization of xylitol disclosed by Heikkila et al. is similar to the process used in the present invention. These processes are indeed somewhat similar, but the end products differ substantially. The more critical question that needs to be analyzed is whether or not the skilled artisan would combine the teachings of Heikkila et al with the teachings of Olinger et al.

Olinger et al. describe a physical combination of milled crystalline xylitol and maltitol to provide a sweetener mixture with improved taste properties. That is a combination of the polyols has been made by physically mixing pure crystals of the separate polyols. Contrary to Olinger et al., the process of the present invention is producing one product (i.e. not a mixture) having one melting point and the product being substantially formed of microcrystals. Said

somewhat differently, the process of the present invention provides a microcrystallized product, wherein the polyol ratios can be adjusted to desired levels. Consequently, the product made by the process of the present invention is substantially different from the product of the prior art.

As mentioned above, the question that remains to be answered is why would the person skilled in the art not have been motivated to combine the teachings of Heikkila et al., concerning the process for the microcrystallization of xylitol, with the teachings of Olinger et al., which teach a sweetener composition that contains a combination of maltitol and xylitol; or if said person skilled in the art would have combined the teachings, why would he have not ended up with the present invention as claimed.

The Office Action is of the opinion that the combination of these teachings would make the present invention obvious. Applicants respectfully disagree. It is respectfully submitted that the Examiner has not at all recognized the problem relating to the crystallization of these polyols together and especially the problems relating to the crystallization of maltitol.

To begin with, it must be recognized that maltitol, xylitol and lactitol all require very high purity of their aqueous solutions for satisfactory conventional crystallization. Imperfectly crystallized polyols tend to be hygroscopic, which easily leads to instability during storage. At the time the present invention was made, it was not known how to satisfactorily crystallize the individual polyols from aqueous solutions containing impurities, such as other polyols, in amounts as high as 25%. Although the prior art includes a number of documents describing the crystallization of the present polyols on their own, it is evident that especially the crystallization of xylitol, maltitol and lactitol posed special problems which made crystallization complicated. For example, lactitol was for a long time considered impossible to crystallize properly.

The Examiner has recognized that Heikkila et al. do not teach the microcrystallization of a polyol composition comprising at least two polyols. Further, Heikkila et al. teach that the purity of the xylitol should be more than 80%, preferably more than 90% and most preferably up to 98% or more (see column 6, lines 50-54 of Heikkila et al.). Thus, Heikkila et al are teaching away from the present invention as it is teaching that the composition should contain at maximum 20% of other ingredients. The process of the present invention clearly requires at least 25% of the other polyol.

Further, as described in the subject specification, polyols have a high solubility and the products produced by spray drying, especially of solutions containing impurities, have been sticky and instable. A typical example of this can be found in the spray drying of maltitol, where the prior art requires a maltitol concentration of above 92 % (see U.S. Patent No. 5,651,829) in order to avoid undue stickiness and to obtain a satisfactory crystal by fluidizing. Stickiness is typically also due to enclosed water and amorphous products, both problems being well known from the crystallization of maltitol and lactitol. This alone should be enough to support why the person skilled in the art would not have been motivated to even attempt to crystallize maltitol and lactitol.

Olinger et al. teach a combination of milled crystalline xylitol and crystalline maltitol. In this composition these crystals are separately crystallized, then milled and finally the milled crystals are mixed together. The end result is not a composition made by the process of the present invention, which contains polyols that have been microcrystallized together into a solid microcrystalline product. An advantage of the present invention is that purification of the polyol mixtures is not necessary and crude polyol mixtures may be used as the starting material.

This is advantageous compared to the three step process of the prior art: separate crystallization, milling and mixing.

The Office Action has also set forth case law according to which the optimization within prior art conditions or through routine experimentation generally will not support patentability. It is stressed that this is not the case with the present invention. The present invention involves much more than optimization within prior art conditions or routine experimentation. For example, if crystallization of xylitol disclosed by Heikkila et al. is considered as prior art, the present invention is not obtained by optimizing such process, because the present invention produces a different product. Further, the production of a different product than in the prior art cannot be considered to be routine experimentation.

Even if for argument sake one would combine the teachings of Heikkila et al., concerning the process for the microcrystallization of xylitol, with the teachings of Olinger et al., which teaches a sweetener composition that contains maltitol and xylitol, one would not end up with the present invention. The process as taught by Heikkila et al. teaches microcrystallization of **a single polyol** (xylitol) and that the purity of it should be more than 80%. Heikkila et al. teach (at column 3, lines 57-59) that "the microcrystalline xylitol of the present invention is preferably produced in a pure xylitol form, i.e. **containing throughout essentially only xylitol**." Thus, the basic teaching of Heikkila et al. is to produce pure microcrystalline xylitol. Even if the skilled artisan would consider using other polyols together with xylitol, one would not be tempted or led to use another polyol in such amounts as required by the process of the present invention. Again, Heikkila et al. teach that the purity of the xylitol should be more than 80%, preferably more than 90% and most preferably up to 98% or more (see column 6, lines 50-54). Thus, Heikkila et al. would not lead one to a process including a step of spraying a liquid feed of

at least two dissolved polyols containing at least 25% by weight of each of the at least two polyols.

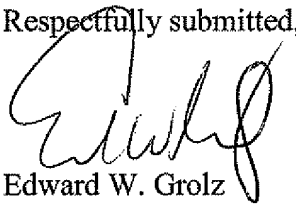
Based on the amendments to the claims and the arguments submitted above, it is respectfully requested that the rejection of the claims based on Oravainen et al., Heikkila et al. and Olinger et al. be withdrawn.

Claim 61 was also rejected under 35 U.S.C. 103(a), as allegedly being unpatentable over Oravainen et al. and Heikkila et al., in view of Olinger et al. as applied previously, and further in view of U.S. Patent No. 6,821,535 to Nurmi et al. (hereinafter referred to as "Nurmi et al.").

It is respectfully submitted that the teachings of Nurmi et al. do not overcome the deficiencies noted above with respect to Oravainen et al., Heikkila et al. and Olinger et al. Consequently, based on the remarks made above, incorporated herein by reference thereto, it is respectfully requested that the rejection of claim 61 be withdrawn as well.

Based on the amendments and the remarks submitted above, it is respectfully submitted that all of the claims in the application contain patentable subject matter and a Notice of Allowance is respectfully solicited.

Respectfully submitted,



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